

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A system that facilitates utilizing an optical medium, the system comprising ~~at least one processor, the system configured to:~~

a processor;

a memory coupled to the processor, the memory having stored thereon instructions that when executed by the processor cause the processor to:

provide concurrent reading of a plurality of data streams from the optical medium to a corresponding one of a plurality of buffers, the plurality of data streams comprising at least one real-time data stream, the reading of a first real-time data stream started at time t_x , and the reading of a second data stream of the plurality data streams started at time t_y , where $t_x \neq t_y$;

analyze at least one of the plurality of data streams;

infer potential starvation of ~~[[a]]the~~ first real-time data stream of the at least one real-time data stream;

perform a utility-based analysis in connection with buffer access and disc access; and
based on the inference of potential starvation and the utility based analysis, take remedial action to mitigate the inferred starvation of the first real-time data stream,

wherein at least one buffer of the plurality of buffers corresponding to the first real-time data stream has a minimum buffer capacity that is a function of read speed and at least two seek times, the at least two seek times comprising a time to seek to a location logically forward on a disc from a first location of a first data stream of the plurality of data streams to a first location of a second data stream of the plurality of data streams, and a time to seek to a location logically backward on the disc from a second location of the second data stream to a second location of the first data stream.

2-10. (Canceled)

11. (Previously presented) The system of claim 1, further comprising a buffer controller that controls creation and/or use of at least one buffer of the plurality.

12. (Canceled)

13. (Previously presented) The system of claim 12, wherein the utility-based analysis is based at least in part on a probabilistic-based determination of cost associated with saving data to the at least one buffer.

14. (Previously presented) The system of claim 12, wherein the utility-based analysis is based at least in part on a probabilistic-based determination of cost associated with retrieving data from the at least one buffer.

15. (Previously presented) The system of claim 1, wherein the optical medium has a guaranteed minimum data transfer rate.

16. (Previously presented) The system of claim 15, wherein the guaranteed minimum data transfer rate is at least about 176 kilobytes per second.

17. (Previously presented) The system of claim 1, wherein the plurality of data streams comprises a plurality of real-time data streams, the system further configured to provide concurrent playback of the plurality of real-time data streams from the optical medium.

18. (Previously presented) The system of claim 17, at least two of the plurality of real-time data streams corresponding to a CD audio track.

19. (Canceled)

20. (Previously presented) The system of claim 1, further comprising a continuity component, the continuity component configured to facilitate concurrent recordation of a plurality of data streams in parallel from the optical medium.
21. (Canceled)
22. (Previously presented) The system of claim 20, wherein the remedial action comprises dynamically ordering reading of the data stream.
23. (Canceled)
24. (Previously presented) The system of claim 1, wherein the inferring potential starvation comprises using a probabilistic-based utility analysis.
25. (Currently amended) A method of utilizing optical media, the method comprising:
- starting to read a first data stream from the optical media at time t_x , the first data stream a real-time data stream;
 - starting to read a second data stream from the optical media concurrently with the first data stream at time t_y ($t_x \neq t_y$), while the first data stream is being read;
 - transferring the first data stream to a first buffer for temporary storage at a sufficient rate to allow transfer of the second data stream without causing starvation of the first data stream,
 - determining read performance across the optical media to facilitate ascertaining an optical hardware device's ability to read the optical media, the optical hardware device employed to run the optical media, the determining read performance across the optical media comprising:
 - reading at least a first amount of data from a first position on the optical media such that an internal media cache of the optical hardware device is not concurrently caching the first amount of data when the reading of the first amount of data starts;

reading at least a second amount of data from a second position on the optical media, wherein the second position is separated from the first position by data representing an increment of playback time that is sufficient for determining characteristic read performances across the optical media; [[and]]

reading data from other positions on the optical media to determine read performances across substantially all of the optical media; and

determining seek times across the optical media to facilitate ascertaining an optical hardware device's ability to seek on the optical media, the optical hardware device employed to run the optical media, the determining seek times comprising:

dividing the optical media into a number of sections, the number of sections comprising at least a first section and at least a second section, such that an internal cache of the optical hardware device does not pre-cache data from the second section when told to start reading from the first section; and

for all ordered pairs of sections comprising any two sections, ensuring that the optical hardware device is reading from the first section and then causing the optical hardware device to seek to the second section to gain characteristic seek performances across the optical media.

26-32. (Canceled)

33. (Previously presented) The method of claim 25, the first amount of data being about 8 megabytes.

34. (Previously presented) The method of claim 25, the increment of playback time being about 5 minutes.

35. (Previously presented) The method of claim 25, wherein the second amount of data is substantially equal in size to the first amount of data.

36. (Previously presented) The method of claim 25, wherein the first amount of data is determined based at least in part upon an internal buffer size of the optical hardware device.
37. (Canceled)
38. (Currently amended) The method of claim ~~[[37]]~~25, wherein all sections are of substantially equal size.
39. (Currently amended) The method of claim ~~[[37]]~~25, wherein a size of the sections is determined based at least in part upon an internal buffer size of the optical hardware device.
40. (Currently amended) The method of claim ~~[[37]]~~25, wherein ensuring that the optical hardware device is reading from the first section comprises reading an amount of data larger than an internal buffer size of the optical hardware device from a section other than the first and second sections.
41. (Currently amended) The method of claim ~~[[37]]~~25, wherein ensuring that the optical hardware device is reading from the first section comprises sending a READ10 command with a force unit access (FUA) bit set to one.
42. (Currently amended) The method of claim ~~[[37]]~~25, wherein causing the optical hardware device to seek to the second section comprises using a READ10 command with a force unit access (FUA) bit set to one.

43. (Currently amended) The method of claim [[37]]25, wherein causing the optical hardware device to seek to the second section comprises using a SEEK command.

44. (Currently amended) The method of claim [[37]]25, wherein a size of the sections is about 5 minutes.

45. (Currently amended) The method of claim [[37]]25, wherein ensuring that the optical hardware device is reading from the second section comprises reading an amount of data larger than an internal buffer size of the optical hardware device from the first section.

46. (Previously presented) The method of claim 25, further comprising determining whether minimum buffer requirements are satisfied, the minimum buffer requirements being a function of read speed and seek times.

47-50. (Canceled)

51. (Currently amended) At least one computer-readable storage medium having stored thereon the following computer executable components:

a component that provides for concurrently reading a non-real-time data stream and a real-time data stream from an optical media, wherein the reading of the non real-time data stream starts starting starts at time t_y and reading [[a]]the real-time data stream from the optical media starts starting at time t_x , wherein $t_x \neq t_y$.

52. (Canceled)

53. (Previously presented) The system of claim 1, wherein the system is further configured to: perform a utility-based analysis in connection with the concurrent reading.

54. (Previously presented) The system of claim 53, wherein the utility-based analysis uses a classifier.

55. (Previously presented) The system of claim 53, wherein the system is further configured to perform the utility-based analysis by inferring when to initiate recordation.

56-58. (Canceled)

59. (Previously presented) The system of claim 53, wherein the system is further configured to perform the utility-based analysis using at least one data fusion engine.

60. (Previously presented) The system of claim 53, wherein the system is further configured to perform the utility-based analysis using at least one support vector machine (SVM).

61. (Previously presented) The system of claim 53, wherein the system is further configured to perform the utility-based analysis using at least one naïve Bayes model.

62. (Previously presented) The system of claim 53, wherein the system is further configured to perform the utility-based analysis using at least one Bayesian network.

63. (Previously presented) The system of claim 53, wherein the system is further configured to perform the utility-based analysis using at least one Hidden Markov Model (HMM).

64. (Previously presented) The system of claim 53, wherein the system is further configured to perform the utility-based analysis using at least one neural network.

65. (Previously presented) The system of claim 1, the system further comprising an optical media drive operatively coupled to read the optical medium, the system further configured to:

determine a first plurality of seek times, each of the first plurality of seek times based on a seek from an earlier location on optical media to a later location on optical media;

determine a second plurality of seek times, each of the second plurality of seek times based on a seek from an later location on optical media to an earlier location on optical media, the first and second plurality of seek times collectively referred to as the combined seek times,

wherein the inference is based on at least a first seek time of the first plurality of seek times and at least a second seek time of the second plurality of seek times.

66. (Previously presented) The system of claim 65, wherein the determining at least a first of the combined seek times comprises:

causing the drive to seek from a first location on the optical media to a second position on the optical media.

67. (Previously presented) The system of claim 66, wherein the causing the drive to seek from a first location on the optical media to a second location on the optical media comprises:

reading at least a first amount of data from the first location on the optical media such that an internal media cache of the optical hardware device is not caching data from the second location on the optical media;

reading at least a second amount of data from the second location on the optical media.

68. (Previously presented) The system of claim 66, wherein the causing the drive to seek from a first location on the optical media to a second location on the optical media comprises:

sending a read command with a force unit access (FUA) bit set to one to the drive.

69. (Previously presented) The system of claim 66, wherein the causing the drive to seek from a first location on the optical media to a second location on the optical media comprises:

sending a SEEK command to the drive.

70. (Previously presented) The system of claim 1, wherein:

the plurality of data streams comprises a plurality of data streams corresponding to CD audio tracks,

a first CD audio track stream of the plurality of audio track streams is a real-time data stream,

reading of the first CD audio track stream started at time t_x ,

reading of a second CD audio track stream of the plurality of CD audio track streams started at time t_y , where $t_x \neq t_y$, and

the reading of the later of the first or second CD audio track streams does not interrupt the reading of the earlier of the first or second CD audio track streams.

71. (Previously presented) The system of claim 70, wherein the second audio track stream is a real-time data stream.

72. (Previously presented) At least one computer-readable storage medium having stored thereon computer executable instructions, the computer executable instructions that, when executed by a computer system, cause the computer system to perform the method of claim 25.

73. (Canceled)

74. (Previously presented) At least one computer-readable storage medium having stored thereon computer executable instructions, the computer executable instructions that, when executed by a computer system, cause the computer system to perform the method of claim 37.